
Logistics Management Institute

**A Statistical Analysis of
Recruitment and Retention
U.S. Army Corps of Engineers
Little Rock District**

CE103T1

March 2001

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A Statistical Analysis of Recruitment and Retention:
U.S. Army Corps of Engineers Little Rock District

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Executive Summary

In the U.S. Army Corps of Engineers, recruitment and retention are an integral part of a district's strategic business processes. Hiring and retention of quality personnel enables a district to deliver projects on time and within budget, keeping customers satisfied. Therefore, the leadership of the Little Rock District (SWL) of the Southwestern Division wants to recruit and retain such employees. In summer 2000, it surveyed the workforce to ascertain the factors contributing to its ability to recruit and retain employees.

The Little Rock District Emerging Leaders group asked LMI to analyze the data collected by SWL to understand how key district characteristics (such as work environment, promotion opportunities, business practices, management, benefits, and colleagues) influence the recruitment and retention of district employees. When possible, we also compared the SWL employee survey and the 2000 Government-Wide Employee Survey conducted by the Office of Personnel Management and the National Partnership for Reinventing Government.¹

The SWL employee survey identified job satisfaction at 88 percent for all employees (a combination of the excellent and average responses). This satisfaction level compares favorably to the 2000 Government-Wide Employee Survey and private-sector Fortune 50 companies, with 63 and 62 percent, respectively.

The district is a good place to work according to the responses received from the survey. Generally, only about a quarter of the respondents indicated a tense work environment. The only notable exception was the technical group, of which 43 percent indicated they worked in a tense environment.

Most employees were direct hires and learned of the Corps through word of mouth, from either a friend or a current employee. This practice is common in the private and public sector.

The survey did not investigate many of the business practices and processes of the district, such as the perceived quality of work produced, meeting customer needs,

¹ Survey results are located at <http://www.employeesurvey.gov/>.

or how the district communicates strategic focus—issues that are especially relevant to organizations undergoing significant change, as is the case with the Corps' implementation of the project management business process. In addition, although the district appears to be operating satisfactorily, district leadership should address some underlying systemic issues. Our analysis found that job satisfaction, age of the workforce, work environment, and recruitment are several of the key areas.

Therefore, the district should restructure and enhance the current survey to evaluate the effect of the district's business management, leadership, and communication practices on the organization, employee groups, project delivery teams, and individuals; quality of work products and customer satisfaction; teamwork found in the organization; and linkage between strategic management and project execution. This new survey should have some logical linkage with the government-wide survey in order to use it as an external benchmark for district performance.

The district should examine the nature of the workforce's concerns with upper management through focus groups, surveys, and interviews, investigating the reasons that

- ◆ changes implemented within the district received such a poor response;
- ◆ more than a quarter of the professional workforce does not feel a part of the SWL team;
- ◆ rules and regulations were problems for the technical, clerical, and blue collar workforce; and
- ◆ the blue-collar employee group feels that promotion opportunities are non-existent.

The district should develop and implement a district recruitment program targeted at several potential pools of candidates, including those recommended by Corps employees (using a referral bonus). It should expand current—and create more aggressive—partnerships with local universities and high schools to develop a potential pool of employment candidates within the local community. This effort should include mentoring programs and a well-designed marketing and publication campaign to build the knowledge base within the community. It should help enhance the image of public service, especially making it very attractive to work for the Corps' Little Rock District.

As the workforce declines in number or quality of technical skills, several possibilities to retain capacity are available to the district. One is to increase pay and compensation for targeted employment groups (e.g., professional, technical, and blue collar) in order to maintain a competitive edge with industry. Another is to outsource parts of the district's operations, leveraging the required workforce skills and capabilities from the private sector.

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Chapter 1

Introduction

BACKGROUND

Recruitment and retention are an integral part of a district's strategic business processes. It is through the hiring and retention of quality personnel that a district enhances its chances of successfully delivering projects on time, within budget, and exceeding the customer's expectations. The leadership of the Little Rock District (SWL) of the Corps of Engineers' Southwestern Division is interested in what is required to recruit and retain quality employees for the district.

In the summer of 2000, the district conducted a survey of the workforce to ascertain what factors contribute to the district's ability to recruit and retain employees. The Little Rock District Emerging Leaders group asked LMI to analyze the data collected by SWL to understand how key district characteristics (such as work environment, promotion opportunities, business practices, management, benefits, and colleagues) influence the recruitment and retention of district employees.

Where possible, we also included comparisons between the SWL employee survey and the 2000 Government-Wide Employee Survey conducted by the Office of Personnel Management and the National Partnership for Reinventing Government.¹

METHOD OF RESEARCH

In conducting this study, we obtained the 420 completed surveys² from SWL and loaded the responses for each question of the survey into an MS Access database for use in the SPSS Base 9.0 statistical package software program.

We investigated whether the variables were related (and the strength and nature of the relationship) and how well they were correlated. In general, we focused on relationships of the variables with job satisfaction (question # 10 in the survey) and used this as the dependent variable³ throughout the analysis. For instance, we investigated how the district work environment related to, or influenced, job

¹ The survey results are located at the following website: <http://www.employeesurvey.gov/>.

² The district sent out 782 surveys and received 420 responses, for a response rate of 54 percent. For the type of survey conducted, in particular in dealing with the subjective information asked of the respondents, this response rate is adequate to generalize the results of this sample to the entire district population.

³ A dependent variable is one that is influenced by another variable. It is typically an output, result, or effect.

satisfaction. We selected job satisfaction because it is directly related to retention—retention increases as job satisfaction increases.

Variables

The variables available for use in our analysis were determined by the structure of the SWL survey. In general, for each question, we assigned a variable name and coded each of the response options into SPSS. The variables we used are described in Appendix A.

In conducting our analysis, we utilized two levels of measurement. The third type, interval-ratio, could not be used.

- ◆ **Nominal.** This is the most basic level of measurement and involves classification of cases (a case is one survey respondent) into categories (each answer in a survey question). The categories themselves are not numerical and can be compared to each other only in terms of the number of cases classified in them. Size comparison of the categories is permitted. The categories cannot be thought of as “higher” or “lower” than each other along some numerical scale.
- ◆ **Ordinal.** At this level of measurement, variables can be classified into categories (as in nominal measurement) and can also be ranked with respect to each other. The categories form a sort of numerical scale that can be ordered from high to low. For example, job satisfaction in the SWL survey has categories that are arranged from high to low: excellent, average, and poor. The major limitation of ordinal level measurement is that a particular score represents only position with respect to some other score. We can distinguish between high and low scores, but the distance between the scores cannot be described in precise terms. Although we know that a score of 2 is more than a score of 1, we do not know if it is twice as much as 1.⁴
- ◆ **Interval-ratio.** These variables are measured in units that have equal intervals and a true zero point. Age and income are examples of these types of variables.

We were limited in this survey analysis to use only the nominal and ordinal variables as structured in the survey. The survey design used primarily nominal

⁴ When we coded the survey questions and categories (possible responses, answers) into SPSS, we had to convert the “a, b, c” responses into numerical “1, 2, 3” responses. For example, the first two responses to the promotion opportunities question (#9 in the retention survey) were “a.) excellent” and “b.) average.” When we coded them into SPSS, they became “1.) excellent” and “2.) average.” When we compared the total number of actual responses, we could not say that “2” was twice that of “1” (or actually, due to the decreasing value of the possible answer responses, that “average” was half that of “excellent”).

variables which limited the sophistication of the statistical techniques and procedures we used.

Analysis

As we conducted our analysis, we reviewed each of the variables and investigated how the district as a whole responded and also how each of the different job classification groups responded (professional, administrative, technical, clerical, and blue collar).⁵ By doing this, we are able to discern any significant differences among these groups that may assist in developing useful recruitment and retention recommendations.

Our analysis utilized descriptive and inferential statistical techniques to investigate the results of the survey.

DESCRIPTIVE STATISTICS

The primary objective of descriptive statistics is to present the research clearly and concisely, using the process of data reduction to organize data into a presentable form. Our most common approach was to calculate, using SPSS, percentages and array them in a cross-tabulation table. This allowed us to easily visualize and compare the results of groups of different sizes, as in comparing the job classification groups.

For example, when investigating the job satisfaction and work environment variables (question #8 in the retention survey), we found the following percentages (of the total number of respondents):

Job satisfaction	Tensed (%)	Relaxed (%)	Strictly business	Other (%)
Excellent	3	19	4	2
Average	17	35	3	6
Poor	8	2	0	1
Totals	28	56	7	9

When we split the total respondents into different groups, we found the following. In this chart, we rolled-up the “excellent,” “average,” and “poor” responses to summarize how each group, as a whole, responded to the work environment question. We typically did our comparisons between groups and the total respondents.⁶

⁵ Throughout the report, we refer to these different job classification groups as “professional group,” “administrative group,” and so on.

⁶ Although the data is not presented in the body of the report, we did evaluate responses within the different work groups across the job satisfaction responses to see if there was any statistical variation. In general, the different job classification group responses, across job satisfaction, were in keeping with the results of the total population of respondents. If there was any variation, it was identified and commented on in the report.

In this case, we compared the total tensed (28 percent) versus the total tensed in the professional group (24 percent), and did likewise with the administrative, technical, clerical, and blue collar groups.

Job classification (Variable JOB_TYPE)	Tensed (%)	Relaxed (%)	Strictly business (%)	Other (%)
Professional	24	59	8	9
Administrative	30	57	7	6
Technical	43	46	8	3
Clerical	18	53	6	23
Blue Collar	23	61	5	11

INFERENTIAL STATISTICS

The next level of statistical sophistication involves a more detailed investigation of the relationships between variables—beyond just the visual inspection of the descriptive approach outlined above. We identified and evaluated the strength and nature of the relationship between two variables, if it existed.

We computed measures of association for the nominal and ordinal variables. We also investigated the use of correlation and regression analysis for these variables, but were unable to develop credible findings. Proper use of these two techniques requires interval-ratio variables to investigate the cause and effect relationships between the variables.⁷

To quantify the strength and nature of the relationship between two variables in a cross-tabulation, we computed measures of association. The magnitude of these values indicated how strongly the variables were related. When measuring nominal variables, only the strength of the association between the variables can be described. When measuring ordinal variables, both the strength and direction can be described.

Nominal Variables

The most popular measure of association used for nominal data is the phi (Φ) coefficient, a modification of the chi-square test statistic,⁸ with values ranging from 0.0 to 1.0 for 2 x 2 tables. In our study, most of the cross-tabulations will be of tables larger than 2 x 2. For this case, we utilized the Cramer's V test statistic.⁹

⁷ The survey used only nominal and ordinal variables.

⁸ The chi-square test is a non-parametric test of hypothesis that tests for independence between two variables. If the variables are independent, then they are not related.

⁹ For a more detailed explanation of the statistical techniques utilized, see a statistics text designed for social science research, such as Joseph F. Healey's *Statistics: A Tool for Social Research*, 5th edition, 1999, Belmont, CA: Wadsworth Publishing Company.

Ordinal Variables

At the ordinal level, gamma (G) was used to measure the association of the ordinal variables.

REPORT ORGANIZATION

In completing this study, we compiled the responses to the survey questions and present them, along with the results and findings of our analysis, in Chapter 2. We present the detailed responses to the survey questions for further review by the district. Although we present our primary conclusions and recommendations in Chapter 3, culled from the findings of Chapter 2, we expect the district will use some of the results, when placed in the right context, to identify other problems and focus areas. The appendixes contain the variable definitions and results of some of the key data runs in SPSS.

Chapter 2

Research Findings

In the following sections, we highlight the key findings from our analysis. The first section of the chapter presents a detailed description of the district personnel, primarily identifying the size and longevity of the SWL workforce. We then present the remaining findings of our analysis.

DESCRIPTION OF SWL DATA SET

There were 420 respondents to the survey. The following table presents the number of respondents and percent of each of the job classification categories.¹ The adjusted total column is the most important column. It shows that the professional group comprises 43 percent of the total district population, the administrative group 13 percent, and so on.

Job classification (Variable JOB_TYPE)	Number of respondents	Percent of total (%)	Adjusted total (%)
Professional	164	39	43
Administrative	47	11	13
Technical	78	19	21
Clerical	18	4	5
Blue collar	70	17	18
Missing or improperly classified	43	10	-
Total	420	100	100

¹ The missing or improperly classified responses indicate that for some of the surveys received, question #1 was blank or that there were multiple answers. For example, several surveys marked their job classification as professional, administrative, and clerical. For these instances, the responses were discarded since they were invalid.

This next table identifies the longevity of the SWL workforce, in terms of percentage of the total workforce, by job classifications at SWL.

Job classification	1-5 Years (%)	6-10 Years (%)	11-15 Years (%)	16-20 Years (%)	21-25 Years (%)	Over 25 years (%)
Professional	10	21	26	15	9	19
Administrative	23	17	26	11	15	8
Technical	20	13	25	17	8	17
Clerical	64	18	18	0	0	0
Blue collar	17	17	8	17	14	27

When the intervals are collapsed into early career (1-10 years), mid career (11-20 years), and late career (21+ years), the following table results.

Job classification	Early (1-10 years) (%)	Mid (11-20 years) (%)	Late (25+ years) (%)
Professional	31	41	28
Administrative	40	37	23
Technical	33	42	25
Clerical	82	18	0
Blue collar	34	25	41

These two tables present several different important and related issues. First, in the professional and blue collar groupings in the current SWL organization, there are not an adequate number of employees in their early career development to cover future retirements and attrition. Secondly, the blue collar workforce is very senior, with 58 percent of the workforce having worked for SWL for more than 16 years. More than a quarter of the workforce has been onboard in excess of 25 years. Lastly, the administrative and technical workforce appears to be stable, in that there are adequate personnel in the system to cover future requirements.

RESULTS OF ANALYSIS

Overview

In conducting this study, we performed analysis on two basic groupings of the respondents to the SWL survey. We first ran the various analyses on the total respondents² and then we split the respondents into their respective job

² As we described in Chapter 1, this total number is representative of the total district population. Throughout the study, when we refer to the total respondents we also extend that to the full district population.

classifications (as they responded to question #1, variable JOB_TYPE) and ran the analyses on these different groups. Our analyses investigated whether there was any relationship between job satisfaction (response to question #10, variable JOBSAT1) and the other variables of the study.

Cross-Tabulation and Correlation

Using the cross-tabulation approach, we investigated both the nominal and ordinal variables for the total number of respondents and the respondents split by job classification.

BEST ATTRIBUTE OF SWL

We found that those with either excellent or average job satisfaction thought that either the good working environment at SWL or the great benefits accounted for 63 percent of the responses. This did not vary significantly among the different job classifications.

JOB BENEFITS RECEIVED AT SWL

In the total number of respondents, we found that 40 percent had received promotion benefits, 26 percent had received diversity training, and 24 percent professional achievement and knowledge. Educational benefits were received by 10 percent of the workforce.

When we split the respondents, we found the following percentage distribution of benefits received:

Job classification (Variable JOB_TYPE)	Promotion (%)	Diversity training (%)	Professional achievement (%)
Professional	38	20	34
Administrative	59	14	14
Technical	44	29	16
Clerical	23	46	15
Blue collar	34	34	27

From this table, we found that the professional and blue collar workforce derives significantly more benefit from professional achievement than the other job groups. We also found that promotion is the key benefit received at SWL.

There was not any significant variation within the job satisfaction responses (excellent, average, and poor) among the different job classifications.

WHAT WOULD MAKE YOU LEAVE SWL

In the total number of respondents, we found that 11 percent would leave for lack of promotion reasons, 22 percent would leave if they found lack of support from management, 15 percent would leave if they experienced unfair managerial practices, 9 percent for disillusionment with Corps' process, 23 percent would leave for pay reasons, and 20 percent would leave based on personal reasons.

When we split the respondents, we found the following percentage distribution of reasons for leaving. This table represents the highest percentage answers:

Job classification (Variable JOB_TYPE)	Lack of promotion (%)	Lack of support from management (%)	Unfair managerial practices (%)	Pay (%)	Personal reasons (%)
Professional	13	19	20	7	11
Administrative	24	22	10	24	15
Technical	8	21	12	24	27
Clerical	20	13	27	7	33
Blue collar	4	26	6	44	15

There was not any significant variation within the job satisfaction choices.

Lack of support from management and pay are the two most important reasons for leaving among the different groups, although pay is the least important for the professional group.

PERCEIVED EFFECT OF CHANGES MADE WITHIN SWL

We found that only 32 percent of the total respondents witnessed beneficial changes within the district while working at SWL.

When we split the respondents, we found the following percentage distribution of changes witnessed:

Job classification (Variable JOB_TYPE)	Beneficial (%)	Detrimental (%)	Insignificant (%)
Professional	37	38	25
Administrative	41	33	26
Technical	26	49	25
Clerical	33	13	54
Blue collar	22	39	39

There was not any significant variation within the job satisfaction choices.

RECOMMEND SWL TO ANOTHER

In the total number of respondents, we found that 69 percent would recommend SWL to another person.

When we split the respondents, we found the following percentage distribution of those who would make recommendations:

Job classification (Variable JOB_TYPE)	Yes (%)	No (%)
Professional	75	25
Administrative	68	32
Technical	62	38
Clerical	78	22
Blue collar	72	28

We did find a statistical significance in the relationship between job satisfaction and those who would recommend SWL to another individual. The following presents the Cramer's V value:

Job classification (Variable JOB_TYPE)	Cramer's V	Significance
Professional	0.458	0.000
Administrative	0.723	0.000
Technical	0.539	0.000
Clerical	0.237	0.603
Blue collar	0.451	0.001

The responses ranged from moderate to strong relationships, except for clerical respondents which had a weaker and not statistically significant relationship. The strongest association is with the administrative group respondents, followed closely by the technical, professional, and blue collar respondents.

SERIOUSLY CONSIDER LEAVING SWL

In the total number of respondents, we found that 54 percent had seriously considered leaving the district.

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Yes (%)	No (%)
Professional	54	45
Administrative	62	38
Technical	55	45
Clerical	56	44
Blue collar	43	57

It appears that the administrative personnel had the highest incidence of desiring to leave the district, with the professional, technical, and clerical personnel at about the same level. Blue collar personnel seemed the most satisfied, in relative terms.

These numbers do appear to be of importance, since more than half of the workforce has seriously considered leaving the district. This is not unusual in the current robust economy with historically low unemployment. On average, knowledge workers in the private sector change jobs about every 2 years.

We found a statistical relationship in that there was moderate association ranging from 0.336 to 0.435 at a significance level of 0.05 for all groupings.

PRIMARY ATMOSPHERE IN WORK GROUP

In the total number of respondents, we found that the following categorized the primary atmosphere in their immediate work group as: tensed (28 percent), relaxed (56 percent), strictly business (7 percent), and other (9 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Tensed (%)	Relaxed (%)	Strictly business (%)	Other (%)
Professional	24	59	8	9
Administrative	30	57	7	6
Technical	43	46	8	3
Clerical	18	53	6	23
Blue collar	23	61	5	11

The technical personnel clearly seem to feel that the work environment is more tense than the other groups.

PROMOTION OPPORTUNITIES

In the total number of respondents, we found that the following rated promotion opportunities at SWL as: excellent (6 percent), average (64 percent), and non-existent (30 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Excellent (%)	Average (%)	Non-existent (%)
Professional	8	69	23
Administrative	2	72	26
Technical	8	64	28
Clerical	7	60	33
Blue collar	2	53	46

Approximately 23 percent of the professional group of respondents indicated promotion opportunities were non-existent, whereas 46 percent of the blue collar respondents felt promotion opportunities were non-existent. To make this clearer and understand the impact of the excellent and average responses, we use a satisfaction index to obtain a weighted score. If we take the possible promotion opportunity responses and assign an "importance" weight to each one as follows: excellent = 1, average = 2, and non-existent = 3, then the following table results. Compare this to the total group score of 224:

Job classification (Variable JOB_TYPE)	Satisfaction score
Professional	215
Technical	220
Administrative	224
Clerical	226
Blue collar	246

From this analysis, the blue collar respondents clearly feel there is a more limited promotion opportunity than the other respondent groups since their satisfaction index of 246 is well above the score of the total population and other respondent groups.

We found a very strong association between job satisfaction and promotion opportunity, with Gamma values (for ordinal by ordinal) ranging from 0.635 to 0.870 at the 0.01 significance level.

JOB SATISFACTION

In the total number of respondents, the overall job satisfaction ratings were: excellent (27 percent), average (61 percent), and poor (12 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Excellent (%)	Average (%)	Poor (%)
Professional	30	59	11
Administrative	23	60	17
Technical	22	66	12
Clerical	28	61	11
Blue collar	27	61	12

The administrative group had a slightly larger dissatisfaction rating.

ADEQUATE TRAINING TO MEET JOB STANDARDS

In the total number of respondents, we found that the following indicated they received adequate training to do job and to meet job standards: true (56 percent), false (4 percent), and half-true (40 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	True (%)	False (%)	Half-true (%)
Professional	62	2	36
Administrative	46	6	48
Technical	55	3	42
Clerical	61	0	39
Blue collar	57	6	37

Approximately 60 percent of the professional and clerical groups of respondents indicated they had received adequate training, whereas only 46 percent of the administrative respondents had adequate training. To make this clearer, we use a satisfaction index to obtain a weighted score. Using the satisfaction scoring technique, as in the promotion opportunities discussion above, we assign an "importance" weight to each one as follows: true = 1, half-true = 2, and false = 3, then the following table results. Compare this to the total group score of 148:

Job classification (Variable JOB_TYPE)	Satisfaction score
Clerical	139
Professional	140
Technical	148
Blue collar	149
Administrative	160

This ranking clearly shows that the administrative grouping of respondents is less than satisfied, in relation to the other groupings of respondents, with their training opportunities.

GOVERNMENT BENEFITS

In the total number of respondents, we found that the following indicated they received more government benefits than they could if working outside the government: true (38 percent), false (14 percent), and half-true (48 percent).

When we split the respondents, we found the following percentage distribution:

Job Classification (Variable JOB_TYPE)	True (%)	False (%)	Half-true (%)
Professional	33	16	51
Administrative	47	9	44
Technical	47	9	44
Clerical	50	0	50
Blue collar	39	19	47

Using the satisfaction scoring technique, as in the promotion opportunities discussion above, we assign an "importance" weight to each response as follows: true = 1, half-true = 2, and false = 3, to obtain the following table results. Compare this to the total group score of 176:

Job classification (Variable JOB_TYPE)	Satisfaction score
Clerical	150
Administrative	162
Technical	162
Professional	183
Blue collar	190

From this analysis, both the professional and blue collar groupings of respondents are far above the total group score of 176, indicating they believe they could

receive more benefits working outside government in relation to the clerical, administrative, and technical respondent groupings.

WORKING RELATIONSHIP WITH IMMEDIATE SUPERVISOR

In the total number of respondents, we found that the following indicated they had a good working relationship with their immediate supervisor: true (72 percent), false (6 percent), and half-true (22 percent). When we split the respondents, we did not find any significant difference from the total respondent group.

We did find a moderate association between the variables of job satisfaction and a good working relationship with the supervisor, with Cramer's V equal to 0.406 at a significance level of 0.000.

RULES AND REGULATIONS APPLIED EVENLY AT SWL

In the total number of respondents, we found that the following indicated the rules and regulations at SWL are applied evenly: true (29 percent), false (20 percent), and half-true (51 percent).

When we split the respondents, we found the following percentage distribution:

Job Classification (Variable JOB_TYPE)	True (%)	False (%)	Half-true (%)
Professional	33	19	48
Administrative	23	18	59
Technical	33	24	43
Clerical	17	6	77
Blue collar	18	15	67

Using the satisfaction scoring technique, as in the promotion opportunities discussion above, we assign an "importance" weight to each response as follows: true = 1, half-true = 2, and false = 3, to obtain the following table results. Compare this to the total group score of 191:

Job classification (Variable JOB_TYPE)	Satisfaction score
Professional	186
Clerical	189
Technical	191
Administrative	195
Blue collar	197

From this analysis, we find that the groupings are fairly well-grouped. Of interest, are the low percentages from the clerical and blue collar groupings in the true category.

There is a moderate to strong association between the job satisfaction variable and the regulations fair variable, with Cramer's V ranging from 0.304 to 0.595 at a 0.000 significance level.

SUPPORT FROM UPPER MANAGEMENT AND CO-WORKERS

In the total number of respondents, we found that the following indicated they received support from their co-workers and upper management: true (51 percent), false (9 percent), and half-true (40 percent). When we split the respondents, we did not find any significant difference from the total respondent group.

We did find a moderate association between the variables of job satisfaction and support from co-workers and upper management, with Cramer's V equal to 0.385 at a significance level of 0.000.

MOST FAVORITE ATTRIBUTE OF JOB

In the total number of respondents, we found that the following was their most favorite thing about their jobs: work done (26 percent), salary (22 percent), location (16 percent), flexible hours (15 percent), job satisfaction (11 percent), and co-workers (11 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Work done (%)	Job satis- faction (%)	Co- workers (%)	Salary (%)	Flexible hours (%)	Location (%)
Professional	32	10	11	17	16	14
Administrative	18	5	19	21	13	24
Technical	22	16	14	23	12	13
Clerical	5	0	17	39	28	11
Blue collar	26	14	5	26	16	12

The most important attribute for the professional was work done, location for the administrative group, work done and salary for both the technical and blue collar groups, and salary for the clerical group.

When combining work done and job satisfaction, the total grouping responded with 37 percent. In the individual groupings, the professional group had 42 percent, blue collar at 40 percent, technical at 38 percent, administrative at 23 percent, and clerical at 5 percent.

As for co-workers, the blue collar group respondents do not value their co-workers as well as the other groupings since their score was significantly below the others, at 5 percent.

When combining salary, flexible hours, and location, the average score was 53 percent. The clerical group had 78 percent, administrative at 58 percent, blue collar at 54 percent, technical at 48 percent, and the professional group at 47 percent.

LEAST FAVORITE ATTRIBUTE OF JOB

In the total number of respondents, we found that the following was their least favorite thing about their jobs: job satisfaction (31 percent), salary (26 percent), location (23 percent), work done (8 percent), flexible hours (6 percent), and co-workers (6 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Work done (%)	Job Satis- faction (%)	Co- workers (%)	Salary (%)	Flexible hours (%)	Location (%)
Professional	9	36	4	20	4	27
Administrative	18	36	0	25	8	13
Technical	2	36	6	24	6	26
Clerical	9	19	9	27	9	27
Blue collar	3	18	12	45	5	17

The least favorite item for the professional, administrative, and technical groups was job satisfaction. This is a very interesting finding in that job satisfaction for the district and each of the job classification groups was extremely high at 88 percent for a combination of excellent and average scores.

For the clerical group, both salary and location were least favorites, and salary was the least favorite item for the blue collar grouping. Again, it is interesting to note that salary was also one of the most favorite attributes of the job.

CHANGE AN ITEM ABOUT YOUR JOB

In the total number of respondents, we found that changing pay/awards and upper management attitude (23 and 19 percent, respectively) were the most selected responses. Changing career opportunities and not changing the job were in the next band of responses, both at about 9 percent. It was interesting that job satisfaction was not chosen as an item to change since on the previous question, most respondents indicated job satisfaction was their least favorite "thing about their job."

When we split the respondents, we found the professional grouping desired to change pay/awards and upper management attitude by 20 percent for each category. Administrative indicated they wanted to change upper management attitude by 21 percent and both pay/awards and career opportunities by 19 percent. The technical group of respondents wanted to change pay/awards by 24 percent and upper management attitude by 21 percent. Clerical desired career opportunities at 38 percent, followed by the blue collar respondents wanting to change pay/awards at 41 percent and upper management attitude at 20 percent.

Job Classification (Variable JOB_TYPE)	Pay/awards (%)	Upper management attitude (%)	Career opportunities (%)
Professional	20	20	
Administrative	19	21	19
Technical	24	21	
Clerical			38
Blue Collar	41	20	

SENSE OF PRIDE TO WORK FOR SWL

In the total number of respondents, we found that 74 percent of the respondents indicated it gave them a sense of pride to work for SWL. When we split the respondents, we found that there was no significant difference among the various job classification groupings.

We did find a statistically strong association between job satisfaction and pride with a Gamma of 0.720 with a 0.000 significance level.

TEAM MEMBER OF SWL

In the total number of respondents, we found that 63 percent of the respondents indicated they felt they were team members of a team at SWL.

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Yes (%)	No (%)
Professional	72	28
Administrative	62	38
Technical	57	43
Clerical	44	56
Blue collar	62	38

The professional grouping felt the strongest that they were members of a team, whereas the clerical felt the least part of a team.

We did find a statistically very strong association between job satisfaction and team membership with a Gamma of ranging from 0.808 to 0.903 with a 0.000 significance level.

CONTRIBUTE TO SUCCESS OF SWL

In the total number of respondents, we found that 96 percent of the respondents indicated they felt they contribute to the success of SWL.

When we split the respondents, we found most of the job classification groupings were 98 percent or above, except for the administrative group with a value of 82 percent.

There was no significant relationship between the variables.

REWARDED FOR A GOOD JOB

In the total number of respondents, we found that 67 percent of the respondents indicated they were rewarded for a good job.

When we split the respondents, we found most of the job classification groupings fell into a range of 66 to 69 percent, except for the administrative group at 75 percent and clerical group at 53 percent.

In this case, Gamma was moderately strong at 0.765 at a significance level of 0.000.

ENJOY WORKING FOR SWL

In the total number of respondents, we found that 81 percent of the respondents indicated they enjoyed working for SWL. When we split the respondents, we found that there was no significant difference among the various job classification groupings.

We did find a statistically very strong association between job satisfaction and enjoy working for SWL with a Gamma of 0.888 with a 0.000 significance level.

JOB OPPORTUNITIES AT SWL

In the total number of respondents, we found that the following indicated was how respondents learned about SWL: other (30 percent), from a friend (29 percent), Corps employee (27 percent), Cpol website (8 percent), newspaper ad (4 percent), and other website (2 percent).

When we split the respondents, we found the following percentage distribution:

Job classification (Variable JOB_TYPE)	Friend (%)	Corps employee (%)	Ad (%)	Cpol Website (%)	Other Website (%)	Other (%)
Professional	27	26	9	5	2	31
Administrative	17	21	5	12	2	43
Technical	27	27	0	15	3	28
Clerical	22	33	0	22	0	22
Blue collar	38	37	2	3	3	17

This table shows that recruitment tends to start by word of mouth from a friend or Corps employee. Further investigation into the "other" category should be taken.

JOB SOURCE

In the total number of respondents, we found the following sources of employment: direct hire (47 percent), transfer from other government (20 percent), COOP (14 percent), transfer from other Corps (8 percent), intern (5 percent), other (5 percent), and military assignment (1 percent).

When we split the respondents, we found the following percentage distribution:

Job type	COOP (%)	Interns (%)	Military (%)	Transfer, other corps (%)	Transfer, other govern- ment (%)	Direct hire (%)	Other (%)
Professional	14	11	1	9	15	49	1
Administrative	19	2	4	7	38	26	4
Technical	13	1	0	13	21	44	8
Clerical	22	0	0	6	22	39	11
Blue collar	5	0	0	2	19	70	4

LONG-TERM CAREER PLANS

In the total number of respondents, we found the following responses as to how the Corps fits into long-term career plans: long-term goals (72 percent), short-term goals (12 percent), door of opportunity (8 percent), and other (8 percent).

When we split the respondents, we found the following percentage distribution:

Job type	Long-term goals (%)	Short-term goals (%)	Door of opportunity (%)	Other (%)
Professional	77	11	7	5
Administrative	64	7	14	15
Technical	73	13	6	8
Clerical	50	13	25	12
Blue collar	74	15	5	6

Long-term goals appear to be less important for the administrative and clerical groups.

KNOWLEDGE OF CORPS

In the total number of respondents, we found the following responses as to what the respondents knew about the Corps prior to employment by the Corps: knowledgeable (14 percent), somewhat (27 percent), slightly (35 percent), and not a clue (24 percent).

When we split the respondents, we found the following percentage distribution:

Job type	Knowledgeable (%)	Somewhat (%)	Slightly (%)	Not a clue (%)
Professional	20	32	33	15
Administrative	2	13	40	45
Technical	10	29	36	25
Clerical	6	22	28	44
Blue Collar	18	27	32	23

The professional and blue collar groupings had the most prior knowledge in that about half of each grouping was knowledgeable or somewhat knowledgeable about the Corps. The administrative and clerical groups were not knowledgeable about the Corps.

FULFILL WORK EXPECTATIONS

In the total number of respondents, we found the following responses as to how the Corps has filled the professional work-related expectations: strongly agree (15 percent), agree (63 percent), disagree (19 percent), and strongly disagree (3 percent).

When we split the respondents, we found the following percentage distribution:

Job type	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)
Professional	20	63	14	3
Administrative	9	64	23	4
Technical	13	65	19	3
Clerical	0	59	35	6
Blue collar	15	64	19	2

When combining the disagree and strongly disagree responses, we find that the administrative and clerical have the highest percentage values (27 and 41 percent, respectively).

In this case, Gamma was very strong, ranging from 0.572 to 0.928 at a significance level of 0.05.

STAY AT SWL

In the total number of respondents, we found the following responses as to what would entice employees to remain with the Corps: promotional opportunities (58 percent), special incentives (21 percent), developmental assignments (12 percent), and educational opportunities (9 percent).

When we split the respondents, we found the following percentage distribution:

Job Type	Developmental assignments (%)	Promotional opportunities (%)	Educational opportunities (%)	Special incentives, etc. (%)
Professional	12	52	14	22
Administrative	12	61	2	25
Technical	12	64	9	15
Clerical	12	69	6	13
Blue collar	16	57	10	17

DECIDE TO WORK FOR SWL

We next investigated the reasons respondents indicated they decided to work for the district by reviewing the results for recruitment survey questions #4 and #5. Since the two questions asked the same question (with different possible responses), we were only able to evaluate the responses within each question. That is, we were not able to find a single, most significant reason for working at SWL since it was not possible to compare responses from both questions #4 and #5.

The next two charts present the top two most significant reasons indicated by the respondents. Two stars (★ ★) indicates the most significant, one star the second most significant reason.

Job type	Unique working opportunities	Career ladder, advancement	Type of work	Education
Professional	★		★ ★	
Administrative		★ ★	★	
Technical		★	★ ★	
Clerical		★ ★		★
Blue collar		★ ★ (tie)	★ ★ (tie)	

Job type	Stability of federal job	Pay	Employee benefits	Location of office
Professional	★ ★	★		
Administrative	★ ★	★		
Technical	★ ★	★		
Clerical	★	★ ★		
Blue collar	★ ★	★		

From these tables, we find that type of work, career ladder/advancement, and job stability are ranked the highest as the most significant reasons for working at SWL.

Chapter 3

Conclusions and Recommendations

In this chapter of the report, we present some of the key conclusions derived from the statistical analysis. Due to task order funding and schedule constraints, and our lack of specific local knowledge of the SWL district, we are only able to present conclusions and recommendations driven by the survey responses. There may be other important factors, such as, local economic conditions and labor market, government hiring practices, and district management change initiatives that either strengthen or weaken the recommendations presented below. Therefore, to evaluate the efficacy of this study, the district will need to put the results of the statistical analysis in the context of the district's operations and organizational culture. Hence, only those recommendations that are deemed appropriate and feasible should be addressed.

CONCLUSIONS

It is clear to us that the district leadership is, in fact, focused on improvement, as indicated by their commissioning of this employee retention and recruitment survey. Our overall conclusion is that, although the district appears to be operating satisfactorily, there may be some underlying systemic issues that should be addressed by district leadership. Job satisfaction, age of the workforce, work environment, and recruitment are several of the key areas identified in our analysis and are presented below.

Job Satisfaction

The SWL employee survey identified job satisfaction at 88 percent for all employees (this is a combination of the response totals for excellent and average). This compares most favorably to the 2000 Government-Wide Employee Survey and private sector Fortune 50 companies with 63 and 62 percent, respectively.

From our analysis, we conclude that many variables contribute to how an employee is satisfied about his or her job. We found a statistical relationship between job satisfaction and each of the following variables:

- ◆ Personal Issues: promotion opportunities, pride in work, working relationship with supervisor, job expectations met, enjoyment of work, rewards, and feeling a part of the SWL team.
- ◆ Environmental Issues: fair regulations, support from upper management and co-workers.

The district should continue to focus efforts on addressing these issues and include work quality and strategic planning issues, as described in the following sections.

Age of Workforce

Recruitment and retention of employees is more difficult in today's economy since fewer people desire to work in public sector. The district faces an impending labor shortage, both in bodies and core competencies skill mix.

As in the 2000 Government-Wide Survey, nearly half of the SWL workforce will be eligible for retirement or "early out" incentives in the very near future. Among the professional, technical and blue collar employee groups, more than 40 percent has worked for SWL for more than 16 years. In the case of the blue collar employees, 58 percent are in this category. In reviewing the professional job category, we conclude that the pipeline for entry-level professionals is not adequate to backfill the void created as the more mature elements of the SWL workforce transition to retirement.

Working Environment

WORK GROUP ATMOSPHERE

The district appears to be a good place to work, according to the responses received from the survey. Overall, 56 percent of the respondents indicate that the working environment is relaxed and that 81 percent enjoy working for SWL. Generally, only about a quarter of the respondents indicated a tense work environment. The only notable exception was the technical group with 43 percent of the technical workforce indicating they worked in a tense environment.

Teamwork (presented by retention question #20) at 63 percent for the total district respondents was just above the Government-Wide 2000 survey result at 61 percent. At 72 percent, the professional group feels even more strongly that they are part of a team. A potential problem area is the technical workforce with a lower score of 57 percent. The survey also indicates that more than a quarter of the professional workforce does not feel it is part of the SWL team. For a projectized organization, this number is significant since the Corps' philosophy is to utilize teams to deliver the project.

Additionally, respondents found that the good working environment at SWL was one of the best attributes of the SWL district and about two thirds of the respondents would recommend SWL to another person, although the technical group responded slightly lower.

MANAGEMENT PRACTICES

Promotion opportunities within the district are, in general, average with about a quarter of the workforce indicating they do not exist. The key exception to this is the blue collar workforce with 46 percent indicating promotion opportunities are non-existent. Although this number is significantly higher than the other groups and may contribute to the decline in the workforce, it does not appear to be important to the blue collar respondents since only 4 percent indicated that lack of promotion was a reason for leaving the district.

One of the key underlying themes in the survey results is upper management's attitude. Lack of upper management support and unfair management practices were two of the most important factors identified by survey respondents when asked what would make them leave the district and also the most important item (after pay) when asked what they would change in their job. When asked about support of upper management and co-workers, respondents indicated support was good. Unfortunately, due to the "double barrel" form of the question, it is not possible to determine if the "good" was for upper management support or co-worker support.¹

When we evaluated the different job groups, we found that the perceived effect of changes made within SWL was poor. Most respondents rated the changes either detrimental or insignificant, with the technical group rating 49 percent of changes as detrimental. Although the work group atmosphere appears to be relaxed (or positive), the district management should look at why and how changes are made in the district. The question itself was vague and therefore additional review of the effect of changes is required.

For the technical, blue collar, and clerical employee groups, a significant portion of the respondents indicated district rules and regulations were not evenly applied. This may also be tied to the problems identified above in effecting changes within the district.

BENEFITS ISSUES

Both the professional and blue collar employee groups feel that their compensation and benefits within the district (i.e., federal government) are lower than what they might make elsewhere in the private sector. This technical skills compensation issue will continue to haunt the district as more district employees leave (e.g., find jobs in the private sector or retire). To fill the gaps, the district must now

¹ In this survey question (question #15 of the retention survey), respondents are asked if they receive support on their projects from co-workers and upper management. This question, in essence, asks two separate questions: did they receive support from their co-workers and did they receive support from upper management? In order to answer in the affirmative, both cases need to be true. If only one case is true, then they might answer "half true"—but the question is: which case do they refer to, the co-workers or upper management? Questions #11 (training) and #14 (rules and regulations) fall into this same category.

compete with the private sector in identifying, attracting, and retaining skilled employees.

When asked about their most favorite attributes of the job, the technical, clerical, and blue collar employee groups responded that salary was the most favorite attribute. Conversely, the clerical and blue collar respondents also indicated that salary was the least favorite attribute.

Only two-thirds of the workforce indicated they were rewarded for a good job, with the clerical workforce even lower at 53 percent. About a third of the workforce feels they are not rewarded, and possibly not appreciated. A formal and informal reward or recognition program would help to communicate management's appreciation of the workforce's efforts.

Recruitment

Most employees were direct hires and learned of the Corps through word of mouth, either from a friend or a current Corps employee. This is common in the private and public sector.

Stability and advancement, career focus, and type of work are the key reasons district employees work for SWL. The district's recruitment program should include these three reasons.

Work Quality and Strategic Planning

The survey did not investigate many of the business practices and processes of the district, such as, the perceived quality of work produced, meeting customer needs, or how the district communicates strategic focus. We find that these issues are especially relevant to organizations undergoing significant change, as in the case of the Corps' implementation of the project management business process (PMBP). In most cases, these issues affect job satisfaction directly. For instance, if the PMBP is viewed as a well-integrated, effective series of business processes that align the district's functional organizations to best meet the customer's requirements and attain USACE and district strategic goals,² then the job satisfaction, pride, teamwork, quality, and professional expectation variables, to name a few, are typically improved.

A survey, such as the one conducted by SWL, should attempt to baseline measure the communication, quality, and strategic planning issues within the district at the organizational, project delivery team, and individual levels. Quality, communication, leadership, satisfaction, and competencies/skill mix should all be addressed. The survey should be conducted on a regular basis (possibly annually) and the resulting performance trends analyzed for variance and root causes.

² The USACE strategic goals include improving the execution of projects and programs and increasing customer satisfaction (ER 5-1-11).

RECOMMENDATIONS

To maintain a high level of job satisfaction, or to increase the “excellent” rating, the district should focus on the many elements (identified above) that contribute to job satisfaction. Using this survey as a pilot, restructure and enhance³ the current survey to evaluate, in addition to what is already covered by the existing survey, the

- ◆ effect of the district’s business management, leadership, and communication practices on the organization, employee groups, project delivery teams, and individuals;
- ◆ quality of work products and customer satisfaction;
- ◆ teamwork found in the organization; and
- ◆ linkage between the strategic management of the organization and project execution.

This new survey should have some logical linkage with the 2000 Government-Wide Survey in order to use it as an external benchmark to district performance.

In the case of the present survey, the district should investigate the nature of the workforce’s concerns with upper management. This can be done using several different techniques: focus groups, surveys (as part of a survey as the one posed above), and personal interviews. At the same time, the district should also take the opportunity to investigate

- ◆ why changes implemented within the district received such a poor response,
- ◆ why more than a quarter of the professional workforce does not feel a part of the SWL team,
- ◆ why rules and regulations were problematic with the technical, clerical, and blue collar workforce,
- ◆ why the blue collar employee group feels that promotion opportunities are non-existent. Although this may be a minor issue from the survey, there are some inconsistencies in the responses and follow-up may reveal more detailed information.

³ Design of the survey should integrate both human resources and business practice factors. It should include nominal, ordinal, and interval-ratio variables to enable the investigation of cause-effect relationships among variables. With the proper design, specific issues can be addressed in a statistically rigorous manner. This survey goes a long way to help design such follow-on research.

.....

If not already in place, the district should develop and implement a district recruitment program, targeted at several potential pools of candidates, that includes any or all of the following elements:

- ◆ Those recommended by Corps employees. Implement a referral bonus system within the district to provide a financial incentive to employees to identify, recruit, and bring on-board (with the help of human resources support) new employees. For example, if an employee identifies a friend or colleague in another firm or organization (public or private), talks him or her into working for the district, and that person is hired, then the SWL employee receives a monetary bonus (typically on the order of \$1,000 to \$1,500) after 90 days of employment for the new employee. This type of program is currently quite successful in the private sector in that a company's own employees are usually the best marketing and recruiting tool available.
- ◆ Expand the current, and create more aggressive, partnerships with local universities and high schools to develop a potential pool of employment candidates within the local community. This should include mentoring programs and a well-designed marketing and publication campaign to build the knowledge base within the community. It should help enhance the image of public service, especially making it very attractive to work for the Corps' Little Rock District.

As the workforce declines in number or technical skills quality, several possibilities to retain capacity are available to the district:

- ◆ One possible option is to increase pay and compensation for targeted employment groups (e.g., professional, technical, and blue collar) in order to maintain a competitive edge with industry. The district should also revisit its employee rewards program, not just at the formal level, but down through all levels of the organization—rewards do not have to be monetary, recognition of individual and team performance goes a long way.
- ◆ Another option is to outsource parts of the district's operations—leverage required workforce skills and capabilities with private sector. For example, as the need for engineering and design increases and the district is not able to adequately staff the requirement with in-house engineers, retaining an architect-engineering firm is a viable, successful approach to increasing capacity within the district.

Appendix A

List of Variables

		Survey Question Number
JOB_TYP1		1
	Measurement Level: Nominal	
	Value Label	
	1 Professional	
	2 Administrative	
	3 Technical	
	4 Clerical	
	5 Other	
	6 Blue Collar	
BESTATTR		2
	Measurement Level: Nominal	
	Value Label	
	1 Good working environment	
	2 Excellent training opportunities	
	3 Great benefits	
	4 Open door policy of upper management	
	5 EEO for everyone	
	6 Mentoring capabilities	
	7 Other	
JOBBENS		3
	Measurement Level: Nominal	
	Value Label	
	1 Promotion	
	2 Diversity training	
	3 Professional achievement and knowledge	
	4 Educational benefits	
QUIT1		4
	Measurement Level: Nominal	
	Value Label	
	1 Lack of promotion	
	2 Lack of support/commitment from management	
	3 Unfair managerial practices	
	4 More responsibility/authority	
	5 Disillusion with the Corps' process	
	6 Pay	
	7 Personal reasons	

		Survey Question <u>Number</u>
SWL_CHG1	Measurement Level: Ordinal	5
	Value Label	
	1 -	
	2 Beneficial	
	3 Detrimental	
	4 Insignificant	
SWL_REC2	Measurement Level: Ordinal	6
	Value Label	
	1 Yes	
	2 No	
QUITSWL1	Measurement Level: Ordinal	7
	Value Label	
	1 Yes	
	2 No	
WORKENV	Measurement Level: Nominal	8
	Value Label	
	1 Tensed	
	2 Relaxed	
	3 Strictly business	
	4 Other	
PROMOPP1	Measurement Level: Ordinal	9
	Value Label	
	1 Excellent	
	2 Average	
	3 Non-existent	
JOBSAT1	Measurement Level: Ordinal	10
	Value Label	
	1 Excellent	
	2 Average	
	3 Poor	
TRAIN	Measurement Level: Nominal	11
	Value Label	
	1 True	
	2 False	
	3 Half-true	

		Survey Question Number
GOVBENS		12
	Measurement Level: Nominal	
	Value Label	
	1 True	
	2 False	
	3 Half-true	
SUPERV1		13
	Measurement Level: Nominal	
	Value Label	
	1 True	
	2 False	
	3 Half-true	
REGSFAIR		14
	Measurement Level: Nominal	
	Value Label	
	1 True	
	2 False	
	3 Half-true	
MGTSUPPT		15
	Measurement Level: Nominal	
	Value Label	
	1 True	
	2 False	
	3 Half-true	
MOSTFAV		16
	Measurement Level: Nominal	
	Value Label	
	1 The work I do	
	2 Job satisfaction	
	3 My co-workers and friends	
	4 My salary and benefits	
	5 Flexible working hours	
	6 Location	
LEASTFAV		17
	Measurement Level: Nominal	
	Value Label	
	1 The work I do	
	2 Job satisfaction	
	3 My co-workers and friends	
	4 My salary and benefits	
	5 Flexible working hours	
	6 Location	

Survey
Question
Number

JOBCHANG	Measurement Level: Nominal	18
Value	Label	
1	Pay/awards	
2	13	
3	Career opportunities/mentoring	
4	Job satisfaction	
5	Job flexibility (time off, work schedule)	
6	Health benefits	
7	My office space	
8	Building location	
9	Upper management attitude	
10	My immediate supervisor	
11	Nothing, I like my job the way it is!	
12	Other	
PRIDE2	Measurement Level: Ordinal	19
Value	Label	
1	Yes	
2	No	
TEAMMBR1	Measurement Level: Ordinal	20
Value	Label	
1	Yes	
2	No	
SUCCESS2	Measurement Level: Ordinal	21
Value	Label	
1	Yes	
2	No	
REWARD	Measurement Level: Ordinal	22
Value	Label	
1	Yes	
2	No	
ENJOYWRK	Measurement Level: Ordinal	23
Value	Label	
1	Yes	
2	No	

JOBOPPS

1

Measurement Level: Nominal

Value	Label
1	Heard about job openings at Corps from friend
2	Heard about job openings from a current or past Corps
3	Advertisement in the newspaper
4	Searched http://cpol.army.mil
5	Searched other website
6	Other

SOURCE

2

Measurement Level: Nominal

Value	Label
1	Student employment program (COOP, Student Aid)
2	Department of the Army intern
3	Corps of Engineers Intern program
4	Military assignment
5	Transferred employee from other Corps
6	Transferred from other government agency
7	Direct hire
8	Other

CAREER

3

Measurement Level: Nominal

Value	Label
1	Long term goals
2	Short term goals
3	Door of opportunity to another Federal agency
4	Army military position transitioned to civilian position
5	Other

NOTE: Questions #4 and #5 were handled separately and involved coding each response with possible rankings of 1 through 6. These possibilities are not identified here.

YRSWORK

6

Measurement Level: Ordinal

Value	Label
1	1-5 years
2	6-10 years
3	11-15 years
4	16-20 years
5	21-25 years
6	Over 25 years

YRSLEFT

7

Measurement Level: Ordinal

Value	Label
1	Less than 5 years
2	6-10 years
3	11-15 years
4	More than 15 years

Survey
Question
Number

KNWL_SWL

8

Measurement Level: Ordinal

Value	Label
1	Knowledgeable
2	Somewhat knowledgeable
3	Slightly knowledgeable
4	Not a clue

NOTE: Question #9 required a written response and was not addressed in the statistical analysis.

EXPECTA1

10

Measurement Level: Scale

Value	Label
1	Strongly agree
2	Agree
3	Disagree
4	Strongly disagree

STAYSWL

11

Measurement Level: Nominal

Value	Label
1	Developmental assignments
2	Promotional opportunities
3	Educational opportunities
4	Special incentives, daycare, fitness ctr, flextime

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